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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/695,211

10/28/2003

Steven Gerard Ross

136122CT

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7590

10/05/2005

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EXAMINER

HO, ALLEN C

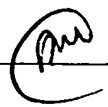
ART UNIT

PAPER NUMBER

2882

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/695,211	Applicant(s) ROSS ET AL.	
	Examiner Allen C. Ho	Art Unit 2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 4-9 and 14-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 10-13, 20 and 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 July 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of species I in the reply filed on 18 July 2005 is acknowledged. The traversal is on the ground(s) that species I and II are related. This is not found persuasive because applicants failed to submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

The requirement is still deemed proper and is therefore made FINAL.

Drawings

2. The drawings are objected to because there are two Fig. 4. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the

Art Unit: 2882

remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claim 16 is objected to because of the following informalities: Claim 16 has an incorrect status identifier. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 20 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 20 recites an x-ray beam profile formed on the detector. It is unclear if this x-ray beam and the beam of radiation are the same beam or different beam.

Claim 21 recites a formation of a variety of sizes of apertures between a plurality of cams of the pre-patient collimator. It is unclear how a structural with only a curved contour could form a variety of sizes of apertures between a plurality of cams.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 2, 10-12, 20, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Swerdloff *et al.* (U. S. Patent No. 5,317,616).

With regard to claims 1, 10, and 11, Swerdloff *et al.* disclosed a CT imaging system comprising: an x-ray source (**12**); a collimator (**22**); and a detector (**50'**); wherein the collimator has a curved contour proportional to a contour of the detector (column 4, lines 57-61).

With regard to claims 2 and 12, Swerdloff *et al.* disclosed a CT imaging system in accordance with claims 1 and 11, wherein the curved contour of the collimator and the contour of the detector are concentric (about the focal point **18**).

With regard to claim 21, Swerdloff *et al.* disclosed an imaging system in accordance with claim 1, wherein the pre-patient collimator is configured to reduce the curvature during formation of a variety of apertures between a plurality of cams (**32**) of the pre-patient collimator.

With regard to claim 20, Swerdloff *et al.* disclosed a method for reducing dosage of radiation incident on a subject, the method comprising: transmitting a beam (**14**) of radiation toward the subject; collimating (**22**) the beam of radiation before the beam reaches the subject; detecting, by a detector (**50'**), the collimated beam of radiation, wherein the collimating is performed by a collimator with a curved contour proportional to a contour of a detector that detects the collimated beam; and reducing a curvature of an x-ray beam profile formed on the

detector by performing the collimating the beam of radiation (Any curvature in the beam is removed by the step of collimating since a beam travels straight after being collimated).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swerdloff *et al.* (U. S. Patent No. 5,317,616) as applied to claims 1 and 11 above, and further in view of Okazaki (U. S. Patent No. 5,801,939).

With regard to claims 3 and 13, Swerdloff *et al.* disclosed a CT imaging system in accordance with claims 1 and 11. Although Swerdloff *et al.* disclosed a linear drive mechanism (32) configured to form an aperture of the collimator, Swerdloff *et al.* failed to disclose a piezo-electric drive mechanism configured to change the size of the aperture of the collimator.

Okazaki disclosed a precision positioning control apparatus comprising a coarse positioner (101) and a fine positioner (102). Okazaki taught a piezo-electric drive is capable of higher resolution than a coarse positioner (column 7, lines 27-36).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a piezo-electric drive mechanism, since a person would be motivated to change the size of the aperture in finer increments.

Response to Arguments

10. Applicant's arguments filed 18 July 2005 have been fully considered but they are not persuasive.

The applicants argue that Swerdloff *et al.* failed to disclose a pre-patient collimator configured to reduce a curvature of an x-ray beam profile formed on the detector. This argument is not persuasive. As pointed out in MPEP §2114, while features of an apparatus may be recited either structurally or functionally, an apparatus must be distinguished from the prior art in terms of structure rather than function. Swerdloff *et al.* clearly disclosed a pre-patient collimator that has a curved contour proportional to a contour of the detector (Figs. 2 and 4). For this reason, the rejections are being maintained.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 2882

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen C. Ho whose telephone number is (571) 272-2491. The examiner can normally be reached on Monday - Friday from 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward J. Glick can be reached at (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Allen C. Ho
Primary Examiner
Art Unit 2882

03 October 2005